REMARKS/ARGUMENTS

Reexamination and reconsideration of this Application, withdrawal of the objection, and formal notification of the allowability of all claims as now presented are earnestly solicited in light of the above claim amendments and remarks that follow.

Claim 6 has been amended to remove the word "optionally". Applicant submits no new matter has been added by the present amendment. New claims 31-34 have been added, and said claims find support through the specification and claims as originally filed, particularly at page 14. Claims 1-3, 5-7, 12-15, and 21-34 are pending in the present application.

Withdrawn Rejections and Allowed Claims

Applicant notes with appreciation the Examiner's withdrawal of the previous claim rejections under 35 U.S.C. §102(b). Further, Applicant notes the Examiner's statement that claims 1-3, 5-7, 12-15, 22, and 24-27 are allowable.

Election/Restrictions

Applicant notes with appreciation the rejoinder of claims 21-23 for examination with the present application. However, in relation to newly submitted claims 28-30, Applicant respectfully disagrees with the allegation that the claims are directed to a non-elected invention.

Applicant respectfully directs the attention of the Office to the Official Action dated October 20, 2004. At page 2, claims 1-20 were classified by the Examiner as being drawn to compounds, compositions, and cosmetics classified in class 548/311.1, 424. Further, Applicant notes that original claim 20, which has been previously examined on its merits, was directed to a pharmaceutical or cosmetic composition. Since claims 28-30 are drawn to a cosmetic composition, Applicant respectfully submits the withdrawal of these claims from consideration is improper. Accordingly, Applicant respectfully requests that claims 28-30 be examined in this application.

Enablement

Claims 21 and 23 stand rejected under 35 U.S.C. §112, first paragraph, for lack of enablement. The Office argues the specification, while being enabling for treating diseases that respond to the inhibition of cyclooxygenase through use of compounds according to formula (I), is not enabling for treating all diseases related to an immune system disorder. In particular, the Office argues one of skill in the art would not be able to treat each and every immune system disorder without undue experimentation. Applicant respectfully traverses the rejection.

While the Office bases its arguments for undue experimentation in terms of treating "each and every immune system disorder", Applicant respectfully submits the Office is overstating the requisite bounds for enablement and is focusing on breadth rather than considering all relevant factors. MPEP 2164.06 states that the test for undue experimentation is not merely quantitative, since a considerable amount of experimentation is permissible if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed.

At page 14, the present specification notes that cyclooxygenase is an enzyme of the arachidonic acid cascade, in which, prostaglandins and thromboxanes (commonly known as prostanoids) are formed. The specification further notes that the cyclooxygenase-inhibiting action of the inventive compounds makes the compounds effective for treatment of diseases connected with immune system disorders, such as those arising from the antiallergic, antipyretic, and analgesic effects of the compounds (see lines 17-20).

The relationship between prostanoids and immune response is well known in the art. As evidence of such knowledge, Applicant directs the attention of the Office to Tilley *et al.*, 2001, *J. Clin. Invest.* 108: 15-23, which is attached hereto. Tilley *et al.* state at page 15 that prostanoids are "part of a complex regulatory network that modulates the actions of immune cells and the surrounding microenvironment." This relationship is specifically exemplified by the immune response. To this end, Tilley *et al.* state that "while prostanoid levels are generally very low in uninflamed tissues, they increase immediately in acute inflammation prior to the recruitment of leukocytes. As immune cells infiltrate the tissues, further increases in prostanoid levels are observed."

Tilley *et al.* further describe the relationship between prostanoids, cyclooxygenase, and the immune response on page 16. Specifically, they note that "prostanoid production depends on the activity of the two COX isoenzymes within cells. COX-1 is present in most cells and its expression is generally constitutive. In contrast, COX-2 expression is low or undetectable in most cells but its expression increases dramatically upon stimulation, particularly in cells of the immune system." Further, at page 17, Tilley *et al.* note that "interactions between prostanoids and T cells have been long recognized and the effects of prostanoids on a range of T cell functions have been described."

In addition to the long recognized effect of prostanoids on immune response, Tilley *et al.* also point to recent research that further illustrates the relationship between prostanoids and immune system disorders generally. At page 19, Tilley *et al.* specifically cite studies that "suggest two additional pathways through which prostanoids can modify the function of immune cells: by direct activation of nuclear receptors and by inhibitory interactions with intracellular proteins." Still further, at page 21, Tilley *et al.* state that "prostanoids have been proposed to act on immune effector cells at any of several levels, and there is evidence that they can modulate the development, function, and survival of these cells."

The thrust of the Office's argument against enablement arises from the allegation that the claimed treatment of diseases connected with an immune system disorder encompasses "thousands of diseases", and that undue experimentation would thus be required for the skilled artisan to treat "each and every immune system disorder." Applicant respectfully submits, however, that the general knowledge in the field does not support such an allegation.

The teaching of Tilley *et al.* clearly lays out the known correlation between prostanoids and immune system disorders and the ability to treat immune system disorders through cyclooxygenase inhibition. Further, Tilley *et al.* clearly illustrates that, contrary to the allegations made by the Office, there is a high degree of predictability in the art. The teaching of Tilley *et al.*, as noted above, indicates there is a well-known correlation between prostanoids and immune responses and the ability to inhibit prostanoid production through use of cyclooxygenase inhibitors.

The Office admits there is a high degree of skill in the art, but the Office attempts to negate the high degree of skill by relying on the broadly argued "unpredictability in the pharmaceutical art." Such a broad characterization cannot be made in the present case. The cyclooxygenase pathways are very well understood in the biological arts, and control of such pathways are also very well understood in the pharmaceutical arts. Tilley *et al.* point out that "pharmacological agents that inhibit COX activity have been used for over 20 years to identify the role of prostanoids in immune responses. More recently, this approach has been complemented by the development of pharmacological inhibitors with specificity for the individual COX isoenzymes" (see page 19). Accordingly, one of skill in the art would be expected to be well equipped to take the compounds identified according to the present invention and immediately use them in treatment of immune system related diseases.

Further, Applicant submits that such use would not require undue experimentation. Multiple various immune-related diseases are specifically pointed to at page 14 of the present specification. This disclosure, in light of the broad understanding of the relationship between prostanoids and immune response that is pointed out by Tilley *et al.*, as well as the previous research in the field related to COX-specific compounds, would clearly light the way for a skilled artisan to easily determine effectiveness of the presently claimed compounds for treating further immune related diseases.

The possibility that experimentation may be required is only relevant if the experimentation would be undue. The skilled artisan, with the benefit of the present specification and the vast knowledge in the art, as pointed out by Tilley *et al.*, would be expected to easily perform any testing needed to determine effectiveness of the claimed compounds for a specific immune-related disease. The Office appears to argue that for a skilled artisan to practice the invention, the skilled artisan would need to first test the inventive compounds against the entire universe of possible immune-related diseases. In practice, this is simply not the case. Generally, a skilled artisan would be expected to be testing for treatment of one, or a few, specific diseases. The experimentation needed to practice the invention is thus well below the threshold alleged in the present action.

In light of the above, Applicant respectfully submits that undue experimentation would not be required to practice the presently claimed invention. Therefore, Applicant respectfully requests reconsideration and withdrawal of the present rejection.

Applicant further respectfully submits that new claims 31-34 are also fully enabled by the present specification. New claim 31 recites a method for treating a disease that is capable of treatment through inhibition of cyclooxygenase. The method particularly comprises administering a pharmaceutical composition comprising a compound according to the invention. Similarly, new claim 33 recites a procedure for the treatment of diseases which are connected with a disorder of the immune system through administration of a compound according to the invention having a cyclooxygenase-inhibiting action. The effect of cyclooxygenase inhibition in the treatment of diseases, including diseases related to immune system disorders, is described at page 14 of the specification, as well as by Tilley *et al.*, which is attached hereto.

New claims 32 and 34 are also directed to a method for treating a disease that is connected with an immune system disorder, and a procedure for the treatment of diseases which are connected with a disorder of the immune system, respectively. Both claims particularly recite a group of diseases for treatment according to the invention. Support for treatment of the recited diseases can also be found at page 14 of the specification.

Confirmation of Receipt of Foreign Priority Document(s)

Applicant notes the Examiner's statement regarding the foreign priority document(s). Applicant notes that a certified copy of German priority Application No. 101 14 775.9 was submitted October 6, 2005. Accordingly, it is requested that the Examiner acknowledge receipt of the foreign priority document(s) in the next communication from the PTO. Applicant will be pleased to provide proof of filing the foreign priority document(s) upon the Examiner's request.

Regarding PCT Application EP 2002/03264, filed March 22, 2002, Applicant notes that, according to 35 U.S.C. §363, an international application designating the United States shall have the effect of a regularly filed U.S. patent application. Applicant respectfully points out that a certified copy of such a national application would not be required to perfect priority to an earlier foreign filed application, and Applicant has never before been required to file a certified

copy of an intervening PCT application designating the United States in order to perfect priority to an earlier filed foreign application. Accordingly, Applicant respectfully submits that the submission of the German priority document, as referenced above, meets the requirements for submission of certified copies of priority documents under 35 U.S.C. §119(b).

Applicant respectfully submits that all claims as now submitted are now in condition for immediate allowance. Accordingly, a Notice of Allowance is respectfully requested in due course. If any minor formalities need to be addressed, the Examiner is directed to contact the undersigned attorney by telephone to facilitate prosecution of this case.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the US Patent and Trademark Office at Fax No. (571) 273-8300 on the date shown below.

Rebecca Kerney — 1/5/06
Rebecca Kerney — Date